

on inner edge 5.5; thumb 8; third finger, metacarpus 33, first phalanx 11.5, second phalanx 10.5, third phalanx 7.2; fifth finger, metacarpus 31, first phalanx 9, second phalanx 9; tibia 16; hind foot (c. u.) 11; calcar 16; free border of uropatagium 6.

Hab. Yellowstone Lake, Yellowstone Park, N.W. Wyoming. Alt. 8000 feet.

Type. Female (just adult). B.M. no. 4. 4. 25. 1. Collected September 1903; presented by J. ffolliott Darling, Esq.

"Caught flying about the Lake Hotel, although the weather was snowy."

This bat is very closely allied to *M. Daubentoni*, but has a more strongly whiskered muzzle, rather larger ears, a less projecting tail-tip, and appears to be darker in colour throughout.

My own inclination would still, however, be to regard it as a subspecies of *M. Daubentoni*; but as I am not writing a general monograph of the group, it seems better in the case of a United States bat to conform to the ideas about nomenclature prevalent in that country.

From *M. yumanensis saturatus*, Miller, apparently its nearest American ally, *M. carissima* is readily distinguishable by its much longer forearm and still larger feet. *M. subulatus*, Say, of similar size, has conspicuously smaller feet and broader ears.

The British Museum also contains another bat, from Lake Winnipeg, collected by Sir John Richardson, which appears to be referable to *M. carissima*, but is unfortunately in too bad a condition for certain determination. It was referred by Dobson to *M. lucifugus*, but is certainly not that species. Allowing for the great altitude of Lake Yellowstone, the occurrence of the same species at Lake Winnipeg, considerably further north, would be quite natural.

In the Old World *M. Daubentoni* occurs in Scandinavia, and, as Dobson says, "attains the most northerly range of all the species of the genus."

XLVI.—*Three new Bats, African and Asiatic.*

By OLDFIELD THOMAS.

Hipposideros Commersoni and its subspecies.

The bats currently referred to *H. Commersoni* fall into four groups, divisible by size, by the number of supplementary nose-leaves, and by colour.

The common mainland form is the largest, with a forearm measurement of 95 mm. and upwards, and with the lower tooth-row (front of canine to back of m_3) about 15 mm. It has four well-developed supplementary leaflets, and often the rudiment of a fifth. In coloration it has the brown and white markings described by Peters well defined and distinct, except in such individuals as have the reddish suffusion so often found in members of this genus.

Its synonymy appears to be as follows:—

Hipposideros Commersoni gigas, Wagn.

Rhinolophus gigas, Wagn. Syn. *Phyllorhina vittata*, Peters, and *Phyllorhina Commersoni*, var. *marungensis*, Noack.

In Madagascar the typical *H. Commersoni*, Geoff., is found: small (forearm about 80–90 mm.; lower tooth-row about 13); supplementary leaflets three, the rudiment of a fourth being occasionally present; coloration dull greyish, with but little indication of the characteristic dark dorsal markings.

In the island of San Thomé, on the opposite side of Africa, is found a somewhat similar form, *H. Commersoni thomensis*, Bocage, which agrees with true *Commersoni* in essential characters, but is even darker, and has a prominent whitish spot on each shoulder at the insertion of the antebrachial membrane.

Finally, in British East Africa and Zanzibar there occurs a form agreeing with *Commersoni* and *thomensis* in size, but with the four leaflets of *gigas* and well-defined colour-markings. It may be briefly diagnosed as follows:—

Hipposideros Commersoni mostellum, subsp. n.

Size small, as in *Commersoni*. Supplementary leaflets four, with rudiment of a fifth. General colour whitish, the brown Y-shaped marking of the back well defined; under surface creamy whitish, a brown line across each shoulder separating off a white patch at the insertion of the antebrachial membranes.

Skull and teeth as in true *Commersoni*, the cheek-teeth conspicuously smaller than in *gigas*.

Dimensions of the type (measured in skin):—

Forearm 92 mm.

Skull: length from cingulum of canine to back of occipital crest 32; basal length to cingulum of canine 26·5; zygomatic breadth 18; mastoid breadth 15; upper cheek-teeth, front of p^4 to back of m^3 8·4; front of lower canine to back of m_3 13.

Hab. (of type). Tana R., British East Africa. Other specimens from Zanzibar.

Type. Male. B.M. no. 89. 3. 8. 3. Presented by H. C. V. Hunter, Esq.

Rhinolophus Denti, sp. n.

Allied to the European *R. euryale*, but smaller.

Size very small, among the smallest species of the genus. Leading characters (in the order used in Dobson's synopsis) : posterior upper premolar separated from the canine, though not very widely, the small anterior premolar in the tooth-row, towards its outer side ; horizontal portion of the sella not widely expanded, though (allowing for shrinkage in the dried skin) it would appear to be more so than is usual in the allied species ; upper margin of the posterior connecting process forming a marked projection, rounded terminally, rising considerably above the summit of the front of the sella ; sides of the vertical process of the sella parallel, summit broadly rounded off ; antitragal notch shallow.

Horseshoe large, covering most of the muzzle, circular, its anterior edge sharply notched in the centre ; lancet short, conical, its sides evenly convergent upwards, thickly covered with fine fur, similar in colour and quality to that of the head. Ears of medium size, their inner margin evenly convex, tip sharply pointed, upper half of outer margin slightly concave ; antitragal notch not deep and the lobe itself comparatively little convex. Hind limbs slender and delicate. Wings from the lower third of the tibiæ. Interfemoral membrane finely fringed posteriorly.

Fur close and fine, about 7 mm. long on the back. General colour above pale grey, the individual hairs dull whitish, with dark brown tips. Under surface nearly white. Membranes brown, the plagiopatagium and interfemoral inconspicuously edged with white.

Skull with the nasal convexity more developed than in *R. euryale*, less than is figured in Peters's *R. lobatus* *. Palate ending opposite the posterior edge of the internal lobe of m^2 .

Dimensions of the type (those in inverted commas taken by the collector in the flesh) :—

Forearm 42 mm.

" Head and body 41 " ; " tail 21 " ; " ear 20 " ; nose-leaf (dry) 9.2×6.3 ; lower leg and foot (c. u.) 25.5.

* Reise Mossamb., Saug. pl. xiii. fig. 17.

Skull: greatest length 17; basal length to front of canines 13·2; breadth of brain-case 7·6; palatal bridge 1·9; front of upper canine to back of m^3 5·9; front of lower canine to back of m_3 6·6.

Hab. Kuruman, Bechuanaland. Alt. 1300 m.

Type. Male. B.M. no. 4. 4. 8. 2. Original number 7. Collected 24th January, 1904, by R. E. Dent. Two specimens.

“Caught in a house.”

This species, the smallest of South-African *Rhinolophi*, seems to represent *R. euryale*, but may be readily distinguished from that, as from all others, by its proportions, its pale colour, the high attachment of its wing-membranes, and its unusually hairy lancet.

Pipistrellus raptor, sp. n.

A rather large species, with long head, proportionally short forearms and tibiæ, and with a bone in the very large penis.

Size rather large, form clumsy. Head long, half the length of the forearm, almost equally broad in front and behind. Muzzle swollen, smooth and rounded; the nostrils small, their edges not projecting; middle line above more deeply grooved between the glands. Ears rather small; base of inner edge with a very narrow hem; inner margin straight, tip narrowly rounded off, outer margin evenly but slightly convex to the shallow emargination separating the low basal lobule. Tragus short, broad, broadest opposite the lower third of the inner edge, the latter straight or slightly concave, tip rounded, outer margin evenly convex, basal lobule distinct, triangular. Wings to the base of the toes. Hind limbs short, feet stout and heavy. Calcar reaching about halfway towards the tip of the tail, its end marked with a projecting lobule; post-calcareal lobe short, but very broad and distinct, supported by a well-marked supplementary cartilage. Tail rather short, of seven vertebrae and a terminal rudiment, involved in the membrane practically to its tip. Penis enormous, as long as or longer than the tibia, the development being mainly in the lengthening of the glans (which is slender and contains a long *os penis*) and the prepuce; the latter is club-shaped, well-haired, grooved above terminally.

Fur extending on to the wing-membranes for about one third of an inch on each side of the body and for a similar distance on the interfemoral; below, a slightly wider area is hairy. Scattered hairs present on ears, the external basal lobe thickly hairy externally.

General colour above dark bistre brown, the ends of the hairs prominently lighter, buffy brown. Below, similar but lighter. Hinder aspect of pubis buffy to base of hairs.

Skull long and low, with a very deep nasal notch. Teeth on the whole like those of *P. ceylonicus* (*P. indicus*, Dobs.). Inner incisors long, their secondary cusp well developed, postero-external; outer incisors just equalling in length the secondary cusp on the inner ones and with an indistinct, low, postero-internal, basal cusp, and a posterior hollow for the tips of the lower canines, as in *P. ceylonicus*. Large pre-molar close to back of canine; the well-developed small pre-molar visible with difficulty from without. Lower incisors slender, scarcely overlapping. Lower canines with a broad cingulum, making its section circular. Anterior lower pre-molar three fourths the height of the second.

Dimensions of the type (measured in spirit):—

Foream 37 mm. (range 36–39).

Head and body 51; tail 36; head 18; ear 13·5; third finger 65; tibia 12; hind foot (c. u.) 9; penis 15, its terminal portion (with the bone) 11.

Skull: greatest length 14·5; upper length in middle line 12; basal length in middle line 10·9; zygomatic breadth 10·6; interorbital breadth 6·1; constriction 4; mastoid breadth 8·6; length of brain-case 5·7; front of canine to back of m^3 6; front of lower canine to back of m_3 6·1.

Hab. Tonkin.

Type. Adult male in British Museum. Collected by Mr. H. Fruhstorfer. Six specimens examined.

This species may be readily distinguished from all its allies by the enormous size of the penis and the presence of a bone in that organ. From Dobson's "*Vesperugo affinis*," only known from a female, it may be separated by its shorter and fewer-jointed tail, stouter feet, shorter tibiæ, and other characters. *P. brachypterus*, Temm., of which I have not seen a specimen, has shorter outer incisors and the wing-membrane arises from the tarsus; described originally from an old male in spirit, no mention is made of the penis.

XLVII.—*Notes and Descriptions of some new Species and Subspecies of Mustelidæ.* By G. E. H. BARRETT-HAMILTON.

IN working through the Mustelidæ in the British Museum of Natural History I find several forms which seem to me to be worthy of recognition mainly because they are either distinguishable as local races of well-known species, or, as in the